

What is claimed is:

1. A method, comprising:  
receiving a data packet transmitted over a network;  
evaluating the data packet for the presence of control  
information; and  
if present, delivering the control information from a  
network processor to an operating system by way of a non-  
invasive driver.
2. The method of claim 1, wherein the operating system  
provides an application programming interface (API) for  
network communications, and further wherein the non-invasive  
driver conforms to the API provided by the operating system.
3. The method of claim 1, wherein the non-invasive driver  
appears to the operating system as a network interface device  
driver.
4. The method of claim 1, wherein the non-invasive driver  
appears to the network processor as a forwarding interface.
5. The method of claim 1, further comprising forwarding the  
data packet on the network when control information is not  
present in the data packet.

1 6. An article comprising a computer-readable medium which  
2 stores computer-executable instructions for memory accessing,  
3 the instructions causing a computer to:

4 receive a data packet transmitted over a network;  
5 evaluate the data packet for the presence of control  
6 information; and

7 if present, deliver the control information from a  
8 network processor to an operating system by way of a non-  
9 invasive driver.

10 7. The article of claim 6, wherein the operating system  
11 provides an API for network communications, and further  
12 wherein the non-invasive driver conforms to the API provided  
13 by the operating system.

14 8. The article of claim 6, wherein the non-invasive driver  
15 appears to the operating system as a network interface device  
16 driver.

17 9. The article of claim 6, wherein the non-invasive driver  
18 appears to the network processor as a forwarding interface.

19 10. The article of claim 6, the instructions further causing  
20 a computer to:

when control information is not present in the data packet, forward the data packet on the network.

11. A method, comprising:

instantiating a driver to communicate between an operating system and a network processor;  
registering the driver with the operating system; and  
registering the driver with the network processor.

12. The method of claim 11, wherein the driver appears to the operating system as a network interface device driver.

13. The method of claim 11, wherein the driver appears to the network processor as a forwarding interface.

14. The method of claim 11, wherein the driver corresponds to a forwarding interface between a network and the network processor.

15. The method of claim 14, further comprising:

receiving a data packet at the forwarding interface, the data packet including control information;  
delivering the control information from the forwarding interface to the driver; and

6 delivering the control information from the driver to the  
7 operating system.

1 16. The method of claim 14, wherein the forwarding interface  
2 is a first forwarding interface, the method further  
3 comprising:

4 receiving a data packet at the first forwarding  
5 interface, the data packet including data;

6 delivering the data of the data packet from the first  
7 forwarding interface to a second forwarding interface; and  
8 routing the data packet on the network.

1 17. The method of claim 16, wherein the data are delivered  
2 from the first forwarding interface to the second forwarding  
3 interface by the network processor.

1 18. The method of claim 14, further comprising:

2 generating control information in the operating system;  
3 delivering the control information from the operating  
4 system to the driver;

5 delivering the control information from the driver to the  
6 network processor;

7 delivering the control information from the network  
8 processor to the forwarding interface; and

9 routing the control information on the network.

1 19. An article comprising a computer-readable medium which  
2 stores computer-executable instructions for memory accessing,  
3 the instructions causing a computer to:

4 instantiate a driver to communicate between an operating  
5 system and a network processor;

6 register the driver with the operating system; and

7 register the driver with the network processor.

8  
9 *Ant* 20. The article of claim 19, wherein the driver appears to  
10 the operating system as a network interface device driver.

11 21. The article of claim 19, wherein the driver appears to  
12 the network processor as a forwarding interface.

13 22. The article of claim 19, wherein the driver corresponds  
14 to a forwarding interface between a network and the network  
15 processor.

16 23. The article of claim 22, the instructions further causing  
17 a computer to:

18 receive a data packet at the forwarding interface, the  
19 data packet including control information;

20 deliver the control information from the forwarding  
21 interface to the driver; and

7 deliver the control information from the driver to the  
8 operating system.

1 24. The article of claim 22, wherein the forwarding interface  
2 is a first forwarding interface, the instructions further  
3 causing a computer to:

4 receive a data packet at the first forwarding interface,  
5 the data packet including data;

6 deliver the data of the data packet from the first  
7 forwarding interface to a second forwarding interface; and  
8 routing the data packet on the network.

1 25. The article of claim 24, wherein the data are delivered  
2 from the first forwarding interface to the second forwarding  
3 interface by the network processor.

1 26. The article of claim 22, the instructions further causing  
2 a computer to:

3 generate control information in the operating system;

4 deliver the control information from the operating system  
5 to the driver;

6 deliver the control information from the driver to the  
7 network processor;

8 deliver the control information from the network  
9 processor to the forwarding interface; and

route the control information on the network.

27. An apparatus comprising:

a general-purpose processor;

a driver executing on the general-purpose processor; and

a network processor configured to communicate data

packets to a set of forwarding interfaces,

wherein a subset of the forwarding interfaces is presented to

the network processor by the driver.

28. The apparatus of claim 27 further comprising an operating

system executing on the general-purpose processor, wherein the

operating system provides an API for network communications,

and further wherein the driver conforms to the API provided by

the operating system.

29. A driver comprising:

an operating system interface configured to appear to an

operating system as a network interface device driver; and

a network processor interface configured to appear to the

network processor as a forwarding interface.

30. The driver of claim 29, wherein the driver is configured

to take advantage of an API in the operating system.